

Secular Changes in Youth Labour Markets and Youth Unemployment in Canada

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Résumé de l'article

Cet article traite de l'évolution du chômage chez les jeunes Canadiens ainsi que des modèles de comportement s'y rapportant sur les marchés du travail de ce groupe de salariés lorsqu'on les considère dans une perspective de longue durée. L'essai discute dans une première partie de nombreuses hypothèses concourantes du chômage chez les jeunes et la manière dont on en traite au point de vue théorique et empirique dans la littérature. Parmi les principales causes du chômage chez les jeunes dont on discute, il y a le salaire minimal, l'abandon de l'école, l'excédent sélectif, le chômage récurrent et les hypothèses cycliques. Ensuite, on a effectué une analyse empirique des changements de longue durée dans les taux de chômage des jeunes. Les séries chronologiques de longue durée du chômage dans ce groupe de travailleurs et les ratios de chômage tant pour les jeunes que pour les adultes, la croissance de la main-d'œuvre et l'emploi des jeunes ainsi que les différences de salaires entre jeunes et adultes font ensuite l'objet d'un exposé.

Une première impression incite à rejeter comme seule cause de chômage chez les jeunes les changements démographiques ou la hausse des salaires des jeunes travailleurs. L'auteur a également procédé à une étude qui fait ressortir les causes structurelles et cycliques du chômage des jeunes par rapport au volume relatif de cette catégorie de main-d'œuvre, à leur remplacement par des femmes plus âgées, aux modifications de la demande de longue durée eu égard aux changements dans l'emploi dans le secteur tertiaire et à la force relative de la demande globale mesurée par le taux des vacances d'emploi.

Fondée tant sur des comparaisons à longue portée du chômage des jeunes que sur des comparaisons entre le chômage chez les jeunes et chez les groupes plus âgés, les analyses démontrent qu'un changement structurel considérable s'est produit tant dans le marché du travail que dans le chômage des jeunes au cours des décennies 1970 à 1980.

Même si le chômage des jeunes peut en partie être attribuable aux tendances régressives de l'économie canadienne, l'étude fait voir que les politiques relatives à la demande seront inefficaces par elles-mêmes à résorber le chômage dans cette catégorie de travailleurs à de bas niveaux historiques.

On devrait plutôt, selon l'étude, proposer un programme de formation des jeunes qui soit total pour les décrocheurs de manière à remplacer la myriade de programmes d'emplois et d'enseignement professionnel pour les jeunes qui ont été offerts jusqu'ici par les divers gouvernements fédéral et provinciaux. L'idée principale de ce programme de formation des jeunes consisterait à fournir une formation en usine obligatoire pour tous les emplois qu'ils pourraient occuper à la fin de leurs années d'études scolaires. Le coût en serait partagé à parts égales par les employeurs, les gouvernements et les débutants et serait en partie défrayé par des salaires inférieurs versés à ces débutants et en partie par des allocations financées à même les impôts sur les salaires associées à des subsides de l'État. L'article cite comme preuve de l'efficacité de systèmes de formation globale pour les jeunes l'exemple de l'Allemagne de l'Ouest, du Japon et de la France.

Secular Changes in Youth Labour Markets and Youth Unemployment in Canada

Klaus Weiermair

This paper considers the evolution of Canadian youth unemployment and associated patterns of behavior in youth labor markets from a long run perspective.

Throughout the seventies and most of the eighties, youth unemployment in Canada has been rising steadily despite declines in the labour force growth for youth aged 15 — 24 since 1973 and despite large youth related expenditure injections in the fields of manpower and education over the seventies. Over the same period of time, Canada also stands up well both historically and internationally as regards programmes and expenditures associated with job creation¹.

Why then has youth unemployment in Canada remained such a stubborn problem and what might be suitable policy prescriptions in the fields of manpower, education and training? In the paper below, we attempt to analyze forces which are hypothesized to have had a secular impact on the behaviour of youth labour markets, followed by a presentation of some empirical evidence and policy recommendations.

THE DEBATE OVER YOUTH UNEMPLOYMENT IN THE LITERATURE

As elsewhere, both the theoretical debate on the causes of Canadian youth unemployment and proposed policy prescriptions in the seventies

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1 For reference see, e.g.: Economic Council of Canada, *An Evaluation of Canadian Federal Manpower Policies: Training and Job Creation, 1970-78*, D.R. MAKI, December 1978.

were to a large extent shaped by theoretical developments and empirical accounts of youth labour market behaviour in the preceding decade. For in the sixties, labour markets of industrialized countries appeared to have adjusted well to the first post-war baby boom. This was particularly apparent in the U.S.A. where an all time peak in teenage labour force growth of over 19% between 1960 and 1964 appeared to have had no appreciable effect on youth unemployment (Kalachek, 1969). Subsequent studies covering this period came to the conclusion that U.S. labour markets had absorbed the baby boom well in that the increasing teenage labour force share was matched by commensurate changes in teenage employment with employment elasticity estimates with respect to output ranging from around .5 (Kalachek, 1969; Dernburg and Strand, 1966) to unity (Thurow, 1966). In the same studies time trends of youth unemployment consistently failed to show up as significant explanatory variables thus negating fears by «Structuralists» that traditional entry level jobs for youth were threatened by technological change, by shifts in the composition of industrial employment and/or inefficiencies of labour market institutions in dealing with the transition from school to work². To recall, the sixties was also the decade in which the «Human Capital Revolution» took place. A period in which human investment spending was seen and interpreted as a panacea to virtually all structural problems ranging from low economic growth to inequities and imbalances in the distribution of earnings and employment (Becker, 1964). Human capital theory was extremely powerful in that it provided quick and ready answers to early concerns and open questions regarding the differential cyclical employment and unemployment behaviour of marginal labour groups including youths, as noted in a number of empirical studies in the early seventies (e.g., in Canada, Lazar and Donner, 1973). Different patterns of search behaviour among youth in labour markets together with high costs and risks of firm-specific human investments were then seen as the first and foremost explanations for differences in the employment and unemployment experience of young and adult workers (Mortenson, 1970; Feldstein, 1973). When throughout the seventies, youth

2 Representative work during this period includes: K.A. and M.S. GORDON (eds.), *Prosperity and Unemployment*, New York, Wiley and Son, 1966. W.E. COHEN and KAPP (eds.), *Manpower Policies for Youth*, New York, Columbia University Press, 1966. H. FOLK, *The Problem of Youth Unemployment in the Transition from School to Work*, Princeton, N.J., Princeton University Press, 1968. F. KALACHEK, *The Youth Labour Market*, Ann Arbor Michigan, Institute of Labour and Industrial Relations, 1969. Thomas DERNBURG and Kenneth STRAND, «Hidden Unemployment 1953-62: A Quantitative Analysis by Age and Sex», *American Economic Review*, March 1966, pp. 71-95. Barbara BERGMANN and David KAUN, *Structural Unemployment in the United States*, Washington, Economic Development Administration; National Commission on Automation and Economic Progress, *Technology and the American Economy*, Washington, U.S. Dept. of Labor, 1966.

unemployment rates began to rise relative to adult rates the analytical focus was therefore being placed on two labour market aspects: a) forces (constraints) seen as intervening in the free wage setting process of labour markets, particularly, minimum wage laws and b) forces which tended to lower the relative cost of unemployment for youth such as lower net costs of job search and increases of unemployment compensation schemes. A great deal of subsequent effort was expended in investigating Canadian youth unemployment with respect to the effects of minimum wage laws (Fortin, 1979; Cousineau, 1979; Swindinsky, 1980), and the general effects of revisions in the Canadian unemployment insurance system in 1971 (Green and Cousineau, 1976; Grubel, Maki and Sax, 1975; Grubel and Walker, 1978). The studies showed a small but positive relationship between minimum wage laws and teenage unemployment and unemployment compensation and unemployment fell however short of explaining the total differential between youth and adult rates and, furthermore, failed to explain the secular rise in the youth unemployment rate. Later work found structural and/or time trend shifts in youth unemployment for the seventies (Denton, Robb and Spencer, 1980) and suggested a long list of potential determinants (Gunderson, 1981). Most recent work for the U.S. and Canada (Hasan and de Broucker, 1984; Fortin, 1984; Bowers, 1984), furthermore, has challenged the view that high turnover youth labour markets constitute a rational and efficient market response with respect to relative net costs of search as viewed by the proponents of the voluntary (search) unemployment hypothesis (e.g., Feldstein, 1973). In addition to finding high job turnover among younger youth (15-19), these studies also show an overproportionate concentration of long duration unemployment spells and discouraged worker effects among Canadian and U.S. youth aged 20-24. Obviously it must matter for policy prescriptions which of the competing youth unemployment hypothesis is being entertained. There is little governments can and should do if job holding pattern and turnover characteristics of youth were at the heart of the unemployment problem provided wages are flexible and no overly generous unemployment insurance schemes exist. On the other hand, a case for intervention can be made if underlying structural changes in the behaviour of youth labour markets exist.

Intertemporal shifts in the cyclical and trend component of youth unemployment could be compatible with at least four major hypotheses (Casson, 1979). According to the «school leaver hypothesis» changes in the response of youth labour market are caused primarily by availabilities of school leavers and the existence of non-price screening mechanisms in hiring. It may for example, prove economical for employers to react to excess supplies with increases in job qualifications;³ recessions would therefore

3 Empirical evidence can be found in: M.W. REDER, «Wage Structure and Structural Unemployment», *Review of Economic Studies*, 31, 1964, pp. 309-22.

produce an overproportionate number of unemployed youths, a large fraction of which will be first-time job seekers with low levels of educational attainment and skills, small prospects of employment and high duration unemployment spells (Hamermesh, 1969). Alternative explanations of changes in youth's cyclical employment behaviour may center on employers' lay-off and hiring procedures discriminating against youth («selective redundancy hypothesis»). Here, a higher probability exists for employed youth to be laid off during the down turn of the business cycle on account of lower expected returns from specific training, lower cost of redundancy payments and union discrimination in favour of a more stable adult work force. Whether such LIFO employment policies may have increased over time would depend on changes in substitutability and substitution between young workers and other types of labour. Increasing deviations between age-related wage and productivity differentials due to institutional forces (e.g., non-compensated changes in the quality of youth labour or downward inflexibility of wages) would cause firms to substitute more capital and/or other labour for youth manpower. The evaluation of price effects in labour demand is unfortunately rendered difficult in that both a relative underpricing of adult labour (through minimum wage laws or a rise in the relative youth wage) as well as overpricing of adult labour may equally cause youth unemployment. The latter case of overpricing is inherent in the «queue unemployment hypothesis». Youth unemployment results here from an excess supply of qualified applicants as youth comes of age and becomes eligible for higher pay (e.g., apprentices) and where the latter is kept artificially high through union or other influences⁴. As far as substitution processes are concerned, there may have been an intertemporal rise in scarcity of experience relative to formal schooling from the sixties into the seventies which would explain an increasing reluctance of employers to substitute younger and more educated for older and more experienced workers. Secular increases in the female labour force and changes in the relative size of other labour force components (e.g., immigrant workers) similarly, may have increased competition for entry level jobs traditionally filled by youth, thus, exerting pressures on both youth wages and unemployment. Past estimates of partial complementarity and substitutability between various demographic groups have in general proven rather unstable with the exception of one outstanding result: a consistent negative partial elasticity of complementarity between adult female and

4 Wage fixing by unions in favour of older workers will cause employers to use training and experience as a screening and rationing device, which discriminates against younger workers, for a further exposition and empirical evidence see: MEDOLF, J., «Layoffs and Alternatives Under Trade Unions in U.S. Manufacturing», *American Economic Review*, 69, 1979, pp. 382-95. Such effects are more pronounced in crafts and professional labour markets, WEIERMAIR, 1984.

young workers (Grant and Hamermesh, 1981; Freeman, 1979; Berger, 1983; Borjas, 1983, for opposite results see Merrilees, 1982). It appears that a shift in employer preferences towards the hiring of adult females in lieu of youth has taken place over time, a trend which has continued into the eighties and which may have been further aggravated youth unemployment on account of a slower tertiary sector growth and employer perceptions of secular declines in the quality of labour among youth applicants⁵.

Finally, one may wish to entertain the «life cycle hypothesis of youth unemployment». According to this view, family dependence, a heightened emphasis on non-wage job benefits and labour market inexperience among youth combined with low levels of skills lead to a concentration of initial youth employment in low wage industries with poor long-term career and employment prospects. As young workers employed in these industries become older, leave home, marry and acquire more financial responsibilities, they also become more conscientious of their low income status and, therefore, quit in order to find better paying career jobs. As a consequence, unemployment will be highest and likely of longest duration when young workers attempt to switch out of these industries in their late teens and early twenties. Since higher abilities and longer schooling involve longer term oriented human investment behaviour and better self-sorting (screening) in labour markets, life cycle unemployment tends to disproportionately affect early school leavers. It is worth noting here that the forementioned labour market behaviour can be interpreted and is consistent with either labour market segmentation (Piore, 1978) or processes of intertemporal substitution between work and leisure (Mincer, 1966).

Most empirical work of the seventies⁶ which attempted to discriminate between alternate causes of youth unemployment has, as the above cited myriad of competing hypotheses would suggest, run into considerable conceptual and statistical difficulties. There is first of all the measurement problem, particularly as regards alleged secular changes in social attitudes, social norms or the structure and quality of education — all of which however ultimately affect the transition from school to work. Some of the determining variables under question such as e.g. minimum wages may display too little variation, other independent observations such as youth labour force growth, labour force participation, and youth employment growth, contain too much collinearity to allow proper specification and be

5 This of course represents soft and hard to measure information, which however, has circulated throughout the seventies in the press, public speeches and local surveys, for somewhat harder British evidence see: Manpower Services Commission, *Young People and Work: Research Studies*, London, HMSO, 1978.

6 For evidence, see e.g.: DENTON, FEAVER and ROBB, 1975, FELDSTEIN, 1973.

useful in statistical analyses. Secondly, since competing hypotheses often amount to using similar data and methods such as *e.g.* true for human capital theoretical and dual labour market based explanations of youth unemployment data cannot be uniquely interpreted using alternate theories. Finally, youth labour markets have been subject to rising government interference in the recent past with programmes of often unpredictable and controversial impact on the employment and unemployment pattern of youth (Gunderson, 1981, *ibid.*, p. 31 ff.)⁷. Keeping this caveat in mind, we consider next some empirical facts concerning youth labour markets and youth unemployment in Canada.

SOME EMPIRICAL OBSERVATIONS CONCERNING THE EVOLUTION OF YOUTH UNEMPLOYMENT IN CANADA

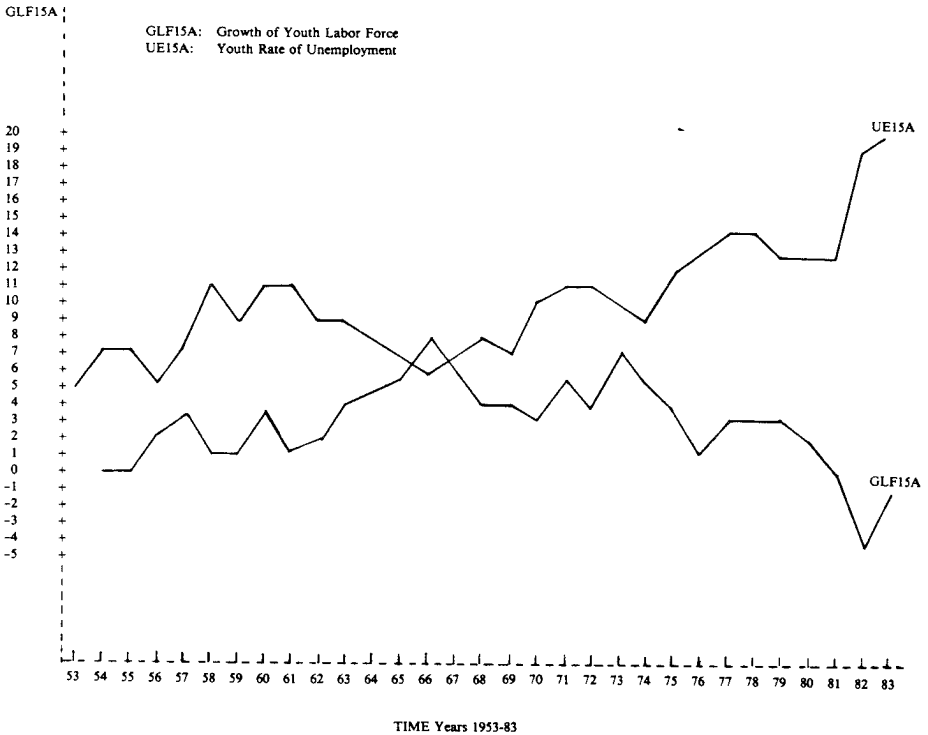
The empirical evidence to be provided below no doubt will not conclude the debate as to whether there have been serious secular and durable changes in the behavior of youth unemployment. Rather the data, charts and regression results to be reported are aimed at calling into question previous diagnoses and policy prescriptions entered on single arguments such as minimum wages, turnover behavior or demographics. In contrast, our reading and interpretation of Canadian youth labor market data suggests long term or structural problems which in turn lead us to consider alternative policies to be discussed in the last section.

Has there been a secular rise in Canadian youth unemployment?

A first visual inspection of youth unemployment time series would indicate a shift towards higher rates for the seventies and eighties (see Chart I). Furthermore, these rates have not changed appreciably during the most recent periods of time. As the seventies have been marked by two major recessions the shifts could plausibly reflect cyclical as opposed to structural causes. Hence a closer look at the empirical behavior of relevant labour market aggregates responsible for cyclical and structural changes of youth unemployment seems to be called for.

⁷ In Ontario alone Gunderson found in 1980 over 33 youth labour market related government programmes to which 12 more were added only recently, see M. GUNDERSON, 1981, *ibid.*, pp. 58-64.

CHART I
Youth Unemployment Rates (15-24) and
Rates of Youth Labor Force Growth
1953 — 1983



Secular growth in the youth labour force

Chart I diagrammatically shows; the unemployment rate of those aged 15 to 24 and the rate of change in the labour force for youth 15 to 24 years of age. As can be seen, annual growth rates in the youth labour force appear to display a much greater cyclical variance in comparison to youth unemployment rates. The difference of behavior in the two series is equally revealed by their first order correlation coefficient of .45. At *prima facie* this seems to cast some doubt on quick demographic explanations of youth unemployment as «cohort overcrowding» or as a «baby boom phenomenon».

Secular rise in youth/adult wage differentials, high minimum wages for youth and/or wage rigidities

All embrative and meaningful wage comparisons between different age groups which at the same time control for different schooling and occupational background are unfortunately not available. As a proxy we use two measures: the ratio of the trade and service wage index over the industrial composite wage index and secondly, the ratio of mean income of youth (15-24 years of age) over the mean income of those over 25 for 1953-1983. Since a large number of youth tends to be employed in the trade and service sectors downward flexibilities of wages in these sectors can be expected to facilitate employment, including youth employment. Changes in the ratio of youth to adult income provides us with a rough idea as to whether there has been a secular change in the slope of the age-earnings profile.

For the employer, steep age-earnings profiles imply low fixed cost of employment for younger workers in terms of such human investments as screening, induction and/or on-the-job training. Viewed from the perspective of youth they imply high net returns to experience and on-the-job training. A secular flattening of age-earnings profiles via increased youth wages would effectively raise employers' cost of on-the-job observation and training of young workers. In turn, this may trigger off substitution towards labour with more easily ascertainable (lower cost) market signals such as e.g., experienced older workers. Workers' discounted opportunity costs of not getting into skilled occupations and/or careers with heavy training at an early age are appreciably higher if earnings profiles are steep and if training has to be entered at the beginning of the working life. Both from a supply and demand perspective secularly rising relative youth wages can therefore cause long-term changes in youth unemployment. Looking at Table 1, we observe a long term decline of the wage ratio index throughout the seventies, with a rebound in the eighties and similarly the mean youth/adult income ratio shows if anything, a long term downward trend. Based on this and other evidence of only small and often insignificant youth unemployment effects from minimum wages (OECD, 1983), we must conclude that rising youth wages and/or wage inflexibilities cannot be considered prime candidates in the explanation of secular shifts in youth unemployment. This is however not to say that throughout the period of investigation youth wages have been sufficiently low to create youth employment.

TABLE 1
Youth — Adult Wage and Income Differences
1953 — 1983

<i>Time</i>	<i>Ratio of wage index for trade and services over the industrial average*</i>	<i>Ratio of average annual wages for youth (15-24) over average annual wages for adults (25+) **</i>
1953	74.39	80.42
1954	75.86	81.42
1955	76.00	81.25
1956	74.47	81.09
1957	75.78	80.74
1958	76.68	76.84
1959	76.75	73.25
1960	77.68	72.05
1961	77.74	70.97
1962	77.80	68.94
1963	77.00	67.09
1964	75.99	68.10
1965	75.57	69.99
1966	75.09	68.66
1967	75.30	66.81
1968	74.51	65.35
1969	74.39	64.06
1970	73.27	62.16
1971	73.60	58.71
1972	74.83	54.74
1973	73.72	56.84
1974	73.63	56.12
1975	73.14	55.38
1976	73.22	58.12
1977	71.44	55.73
1978	71.16	55.75
1979	70.45	55.55
1980	70.26	55.36
1981	64.47	55.19
1982	68.74	55.02
1983		54.86

* Statistics Canada Co. No. 72.022.

** Income Distribution by size in Canada (Statistics Canada) quoted in M. Merrillees (1982), p. 473.

Secular changes in substitution or long term shifts in industry employment?

Throughout the last three decades labor force participation rates of women have been rising. The latter phenomenon could have caused youth unemployment to rise if it were true that adult female workers re-entering the work force after child birth or looking for work while attending household duties were considered a good substitute to youth labour. At the same time, industries which employ high shares of female and young workers (e.g., trade and service sectors) may have undergone a slowdown of growth in the late seventies and eighties (Employment and Immigration, 1981). Comparing the behavior of employment growth in the trade and service sectors with the growth of youth unemployment for the entire period 1953 to 1983, we find that both growth rates show a remarkable coincidence in terms of direction and timing (see Chart 2). Thus, youth unemployment/employment appears to be closely tied to the cyclical behavior of the tertiary sector.

The cyclical sensitivity of youth employment and unemployment

As with other unemployment, youth unemployment can be cyclical in nature. An interesting question in this context relates to possible long term changes in the cyclical component of youth unemployment. The cyclical response to youth unemployment could e.g., show secular increases on account of changing hiring and lay-off practices towards youth or stem from long-run youth employment shifts in cyclical (non-cyclical) industries. The 1971-72 revision of the *Unemployment Insurance Act* may e.g., have affected employers' hiring practices towards youth.

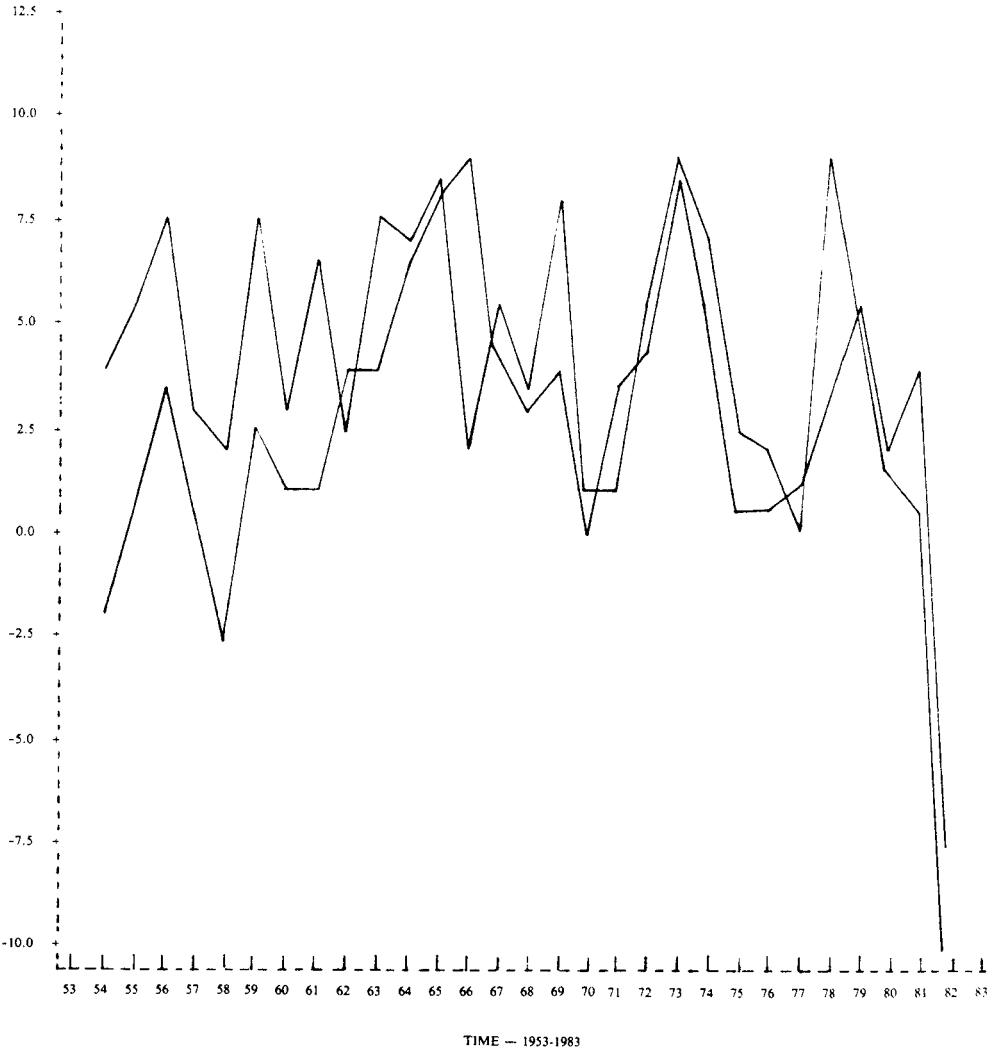
A preliminary empirical test of secular determinants

As primary data base, we use seasonably adjusted time series for youth and adult employment, unemployment, labor force and population for the period 1953-1983⁸. Annual series of job vacancies⁹ expressed as thousands

8 The time series are corrected for the shift from labour force 14 years of age plus to that of 15 years of age and over and for the other changes made by Statistics Canada in 1975. Since our interest was focussed on long run changes in the behaviour of the total youth labour market and youth unemployment no further age sub-groupings were undertaken. We are aware of the differences in behaviour between age and sex groups 14-19 and 20-24.

9 Although one might object to using help wanted indices or vacancy rates as cycle indicators on account of their narrow coverage, they offer the advantage of greater consistency in comparison to other measures such as the prime male unemployment rate which underwent substantial structural changes in the seventies (for other empirical work see e.g., Frank REID and Noah MELTZ, 1979, and KALISKI, 1984).

CHART 2
Annual Growth of Employment in Trade and Services (upper curve)
and Annual Growth of Youth Employment (lower curve)



of job openings and extended for later years by Denton *et al.*,¹⁰ serve as our cyclical measure of business activity. Finally, the rate of employment growth in the trade and service sector and the same rate corrected for average economic growth will be used as proxies for structural changes on the demand side. The analysis involves specification of reduced form regression equations in which youth and adult unemployment rates from 1953 to 1983 are explained as a linear function of the ratio of the youth and adult labor force to total labour force (RLF_1 , and RLF_2), the ratio of adult female employment to total employment ($FREM_2$), annual vacancy rates ($PREVAC$) and both the annual rate of employment growth in the trade and service sector ($GRTSEMP$) and the same corrected for average annual growth rate ($AGTRSEMP$). In order to account for the effects of revisions in the *Unemployment Insurance Act* and/or other structural changes a dummy variable *LEGIS* was introduced serving as a shift parameter for the period 1971-1983. Contrasting results of behavior for both the youth and adult unemployment rate are reported in Tables 2a and 2b.

To a large measure the findings are as expected. We first note a substantially different behavior of time trends between youth and adult unemployment rates. Furthermore, there has been a shift towards increasing trends in the seventies. The latter is apparent in equation 5 when *LEGIS* is introduced. For we notice a sizable difference in the shift parameter estimates for youth and adult unemployment respectively. The size of the coefficient in the adult unemployment equation of 2.0 suggests a secular change of average unemployment rates after 1971 by 2% on account of changes in the *UIC Act*, an estimate which is in line with previous findings (Grubel, Maki and Sax, 1975; Green and Cousineau, 1976). The much larger reported coefficient of 4.7 for youth at face value could be interpreted as induced job search youth unemployment. To the extent that other non-included structural changes *e.g.*, declining quality of education may have coincided with the revision of the *UIC Act*, their effects would be included in the coefficient for *LEGIS*¹¹. Next we notice the expected and differing cyclical response of youth and adult unemployment to changes in the vacancy rate. As shown in equation 5, each increase of 10,000 vacancies lowers the youth and adult unemployment rate by .08 and .04% respectively, thus confirming earlier findings of greater cyclicity of youth labour

¹⁰ F. DENTON, B. SPENCER and ROGGA, *Patterns of Unemployment Behaviour in Canada*, Economic Council of Canada, Discussion Paper No. 36, 1978.

¹¹ Another way to test for structural instability is the use of Chow Tests. The latter was carried out for youth and adult unemployment regressions for the periods 1953-70 and 1971-83. Based on F values calculated the hypothesis that the relationship in equation 4 for 1953-70 had remained stable over 1971-83 had to be rejected for both the youth and adult unemployment regression.

TABLE 2a
Regression Results for Youth Unemployment

1953-83	1	2	3	4	5	6	7
Intercept	5.5 (6.8)	-4.16 (0.9)	14.2 (2.0)	-18.9 (-3.6)	-0.27 (0.05)	1.99 (0.34)	1.73 (0.43)
TREND	0.27 (6.1)						
RLF1		-0.14 (0.7)	-0.76 (2.8)	0.68 (2.4)	0.06 (0.24)	-0.01 (-0.06)	0.10 (0.41)
FREM2		0.91 (7.1)	0.66 (4.9)	9.84 (7.4)	0.58 (5.6)	0.55 (5.4)	0.41 (3.5)
PREVAC				-0.08 (-3.8)	-0.08 (-5.1)	-0.07 (-3.9)	-0.07 (-4.4)
LEGIS			4.0 (3.1)		4.07 (4.4)	3.9 (4.3)	3.9 (4.6)
GTRSEMP						-0.10 (-1.5)	-0.16 (-2.2)
AGTRSEMP							0.57 (1.9)
R ²	0.5744	0.7276	0.8022	0.8115	0.8967	0.9060	0.9198
DW	0.547	0.811	1.189	0.531	1.107	1.175	1.231

TABLE 2b
Regression Results for Adult Unemployment

1953-83	1	2	3	4	5	6	7
Intercept	3.40 (7.8)	-25.3 (2.9)	-47.4 (4.6)	4.2 (0.35)	-17.5 (-1.6)	-19.5 (-1.7)	12.8 (-1.7)
TREND	0.07 (3.0)						
FREM2		0.38 (2.8)	0.25 (3.8)	0.35 (5.8)	0.22 (3.8)	0.21 (3.9)	0.13 (1.9)
RLF2		0.29 (6.0)	0.61 (4.5)	-0.06 (-0.43)	0.24 (1.7)	0.27 (1.9)	0.21 (1.5)
PREVAC				-0.03 (-3.1)	-0.04 (-4.0)	-0.03 (-3.6)	-0.03
LEGIS		2.1 (3.1)			2.0 (4.0)	1.9 (3.8)	2.0 (4.2)
GTRSEMP						-0.04 (-1.0)	-0.07 (-1.8)
AGTRSEMP							0.33 (2.0)
R ²	0.2441	0.5840	0.7006	0.6753	0.8062	0.8144	0.8436
DW	0.473	0.769	1.169	0.579	1.133	1.232	1.282

markets (Lazar and Donner, 1973). The cyclical coefficient for youth unemployment however appears highly unstable and even becomes positive if split sample regressions for later periods (1971-1983) were arranged. The latter could represent changes towards LIFO hiring and dismissal patterns for youth over the business cycle and/or reflect a cyclical response of youth labour force participation rates. Both could be interpreted as increased movements of young people into the labour force during business cycle up-turns in search of better (long term) career jobs with the result of creating higher levels of frictional and structural unemployment among young workers.

Looking at the effect of secularly rising adult female employment ratios ($FREM_2$), we notice that job finding difficulties of youth apparently have been further aggravated by female employment substitution. Our hypothesized higher rate of substitution between youth and female adult labour in comparison to adult groups was confirmed. Depending on particular equations the coefficient for $FREM_2$ has two to three times its size in the youth unemployment regression.

The rising labour force participation and employment rate for adult females previously was shown to have coincided with structural employment shifts away from youth and female service sector jobs. An indication as to the possible nature and impact of such structural demand determinants can be gleaned from the behavior of $GTRSEMP$ and $AGTRSEMP$. As expected, inclusion of $GTRSEMP$ in equations 6 and 7 reduces the substitution coefficient for female labour ($FREM_2$) and in the case of youth unemployment also lowers the coefficient for the policy shift parameter slightly. When coupled with $AGTRSEMP$ the effect becomes stronger. The latter may suggest existence of non-linear relationships between youth unemployment and tertiary sector employment growth. *E.G.*, youth unemployment may react in accelerated fashion to changes in employment growth in the tertiary sector.

Finally, we also observe the importance of the relative size of the youth labour force upon youth unemployment, the demographic factor, which is often blamed for the persistence of high joblessness among youth. The association between changes and size of the youth labour force and youth unemployment is weak, unstable and statistically non-significant.

Reconciliation of data and regression results: A Structuralist Interpretation

A possible and with the above results consistent interpretation of secular changes in youth unemployment and the behavior of youth labour markets might reconstruct post-war developments as follows:

Throughout the fifties and into the mid sixties high economic growth, a rapidly expanding tertiary sector, accommodating flows of immigrant workers (with respect to scarce blue collar skills) together with a balanced system of learning and training (in terms of the mix of institutional and non-institutional training) seemed to have provided a high degree of flexibility and absorptive capacity in the labour markets for youth. Many of these labour market conditions underwent rather drastic changes in the seventies. An overall decline in economic growth and productivity with rising nominal and real wages led first of all to greater international competitive pressures. This meant that the control of unit labour cost became of primordial concern in the private sector and later in the public domain. Hence, when simultaneously faced with high turnover and risky (costly) human investments in the form of initial screening and training employers began turning towards organization-external forms of skill acquisition which were generally perceived as being cheaper in terms of fixed costs of employment. More reliance was beginning to be placed on «market» tested skills and qualifications, and documentary proff of qualifications through certification became prerequisites for many jobs and occupations. The latter reinforced a secular institutionalization process of learning and training which had already started in the sixties under the aegis of most provincial systems of education¹². A further long-run stimulus of labour market turnover particularly among those 14-24 years of age came from the liberalization of the *UIC Act* in 1971 and more importantly through changes of work values towards a shorter-run orientation of jobs, careers and working conditions. The latter was itself a result of massive socialization in formal schooling through increased emphasis on self actualization and individual psychological growth. With a documented quantitative and qualitative lack of adequate counselling of students towards specific careers and jobs and in the absence of available low cost self sorting mechanisms extensive job search in organization external labour markets became a more efficient way in which young workers and employers could acquire information and respectively gauge the real world distribution of working conditions and worker skills. The associated problems of search unemployment after schooling appear, however, as a more prevalent phenomenon among those less educated or with less discernable career specialization as pointed out in a number of recent investigations. Graduates in education, engineering, computer science, medicine or management show e.g., invariably lower rates of initial unemployment than graduates in the humanities, social sciences or fine and applied arts (Selleck, 1980; Turritin, 1980; Anisef, Paasche and Turritin, 1980).

12 For a discussion see: K. WEIERMAIR, *Apprenticeship Training in Canada: A Theoretical and Empirical Analysis*, Economic Council of Canada, Discussion paper no. 250, Ottawa, 1984.

Thus, in the late seventies and eighties as traditional low wage youth labour markets offering low cost job search/turnover began declining in importance and career type entry level jobs become more scarce in the face of both public sector employment freezes and employers' realized substitution possibilities the unemployment situation of youth was bound to worsen. In addition, youth who had joined low wage employment in their teens began drifting out of these jobs and sectors in their twenties in search for more stable jobs with long term careers. The latter contributed to the rise in spells and duration of unemployment among those 20-24 years of age towards the end of the seventies and in the eighties as has been also found elsewhere (Hasan and de Broucker, 1984). To sum up: our interpretation of youth labour markets and youth unemployment suggests that neither «coming of age demographically» nor expansionary macro measures (Fortin, 1984) would help to remedy the present situation. Rather, we suggest to counter the structural weaknesses of youth labour markets with youth training programmes which we will discuss next.

THE POSSIBLE CURE: ALL-EMBRACIVE YOUTH TRAINING

If our previous assessment has been correct, Canada would need a new set of employment and education/training policies aimed at school leaving youth. Below, an attempt is made to outline a specific proposal designed to increase career jobs and skill profiles through long career/training ladders in the private sector, leaving the question of necessary education policies and reforms for others to discuss.

The central idea of our proposal is to help deepen skill formation processes among youth in Canadian organizations through a policy or set of policies designed to increased returns to post-school human investments for both employers and workers. Its essential features are:

(1) All entry level jobs first occupied by school leavers become subject to a compulsory minimum amount of occupational training lasting from a minimum of one to a maximum of two years. Given the existence of market externalities and pirating policies of firms this would have to be a legislative measure imposed on all employers¹³.

(2) Training thus provided is likely to constitute a mixture of general and firm — or industry-specific training which requires real resources. Therefore, it is suggested to share its financing equally between employers, trainees and governments. Firms would be allowed to assess and pay school

¹³ Alternatively, policy makers may *e.g.*, wish to exclude declining industries/sectors from this scheme thus fastening reallocation of resources.

leavers during their first year of training according to productivity net of training cost. Trainees would receive an additional educational allowance during their first year of work in the form of a training voucher, to be financed through equal contributions from governments and employers. Employers in turn would be required to contribute through a payroll tax scheme. The total pay of school leavers in their first job (*e.g.*, wages plus educational allowance) is to be calculated so as to equal a certain fraction of wages paid to a comparable fully qualified/experienced worker in the same job or occupation, say *e.g.*, 80%. Allowing trainees' wages to be determined competitively and without being constrained by minimum wage legislation should provide incentives for employers to more carefully screen, train and develop young people as opposed to using traditionally cheaper screening mechanisms such as age and/or experience. Put differently by creating a steeper age-earnings profile the fixed cost of initial employment to the firm will be lowered. A more direct control over decisions concerning their own training and the higher price to be paid for incorrect initial sorting and training would mean that school leavers too, now have incentives to choose a more optimal (efficient) path of initial employment and training.

(3) The forementioned initial employment/training scheme would have to be subject to controls with regard to some minimum quality in order to prevent firms from maximizing short run profits from training activities as opposed to maximizing long run returns (productivities) from investing in their human resources. A large number of differing control systems could be conceptualized and no doubt would be subject to considerable discussion among the participants to the exchange. A very simple and probably most effective system would be one in which the employer has to draw up a detailed training schedule as part of the initial employment contract to be co-signed by the trainee upon joining the firm. Copies of these employment contracts could then be deposited at a governmental agency which was in charge to making random checks with respect to the adherence of training so stipulated. Quality standards would be agreed upon in advance.

(4) Finally, provisions should be made which would make it difficult if not impossible to lay off trainees during their first year of employment/training thus changing traditional lay-off strategies and seniority principles adhered to by both management and unions. We would argue that the above proposed measures will lift the overall amount of skill formation among Canadian youth in their first year of employment which should not only help reduce a major portion of the structural and frictional component of youth unemployment but also increase labour productivity and lengthen the planning horizons of firms with respect to manpower.

An elaboration of technical details surrounding this proposal and its costing relative to the myriad of direct and indirect youth employment and training programmes now in existence at both federal and provincial levels of jurisdiction, though necessary, has been beyond the scope of this paper. There is nevertheless reason to believe that such a simplified and more direct system of intervention would pay off handsomely in social terms. Evidence to this comes from a number of international comparisons and comparative studies regarding youth employment services and programmes and associated levels of youth unemployment in major industrialized countries (CEDEFOP, 1978; OECD, 1981; Reubens, 1977, 1980). For problems of transition from school to work in general and youth unemployment in particular appear less prevalent among those countries which either have instituted well-developed all embracing programmes of initial training such as is true *e.g.*, to some extent with apprenticeship in West-Germany or employer centered on-the-job training in Japan or otherwise have created all embracing private sector employment and training opportunities as is *e.g.*, true with the development of the employment contract system for school leavers in France (CEDEFOP, *ibid.*, pp. 72-84). Even if none of these foreign schemes were to prove worthy of imitation or adoption in the setting of our labour markets and education system our previous analyses suggest that Canada still needs a longer term oriented and more comprehensive youth employment strategy than what is in place at the present time.

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Les changements de longue durée en matière d'emploi et de chômage des jeunes

Cet article traite de l'évolution du chômage chez les jeunes Canadiens ainsi que des modèles de comportement s'y rapportant sur les marchés du travail de ce groupe de salariés lorsqu'on les considère dans une perspective de longue durée. L'essai discute dans une première partie de nombreuses hypothèses concourantes du chômage chez les jeunes et la manière dont on en traite au point de vue théorique et empirique dans la littérature. Parmi les principales causes du chômage chez les jeunes dont on

discute, il y a le salaire minimal, l'abandon de l'école, l'excédent sélectif, le chômage récurrent et les hypothèses cycliques. Ensuite, on a effectué une analyse empirique des changements de longue durée dans les taux de chômage des jeunes. Les séries chronologiques de longue durée du chômage dans ce groupe de travailleurs et les ratios de chômage tant pour les jeunes que pour les adultes, la croissance de la main-d'oeuvre et l'emploi des jeunes ainsi que les différences de salaires entre jeunes et adultes font ensuite l'objet d'un exposé.

Une première impression incite à rejeter comme seule cause de chômage chez les jeunes les changements démographiques ou la hausse des salaires des jeunes travailleurs. L'auteur a également procédé à une étude qui fait ressortir les causes structurelles et cycliques du chômage des jeunes par rapport au volume relatif de cette catégorie de main-d'oeuvre, à leur remplacement par des femmes plus âgées, aux modifications de la demande de longue durée eu égard aux changements dans l'emploi dans le secteur tertiaire et à la force relative de la demande globale mesurée par le taux des vacances d'emploi.

Fondée tant sur des comparaisons à longue portée du chômage des jeunes que sur des comparaisons entre le chômage chez les jeunes et chez les groupes plus âgés, les analyses démontrent qu'un changement structurel considérable s'est produit tant dans le marché du travail que dans le chômage des jeunes au cours des décennies 1970 à 1980.

Même si le chômage des jeunes peut en partie être attribuable aux tendances régressives de l'économie canadienne, l'étude fait voir que les politiques relatives à la demande seront inefficaces par elles-mêmes à résorber le chômage dans cette catégorie de travailleurs à de bas niveaux historiques.

On devrait plutôt, selon l'étude, proposer un programme de formation des jeunes qui soit total pour les décrocheurs de manière à remplacer la myriade de programmes d'emplois et d'enseignement professionnel pour les jeunes qui ont été offerts jusqu'ici par les divers gouvernements fédéral et provinciaux.

L'idée principale de ce programme de formation des jeunes consisterait à fournir une formation en usine obligatoire pour tous les emplois qu'ils pourraient occuper à la fin de leurs années d'études scolaires. Le coût en serait partagé à parts égales par les employeurs, les gouvernements et les débutants et serait en partie défrayé par des salaires inférieurs versés à ces débutants et en partie par des allocations financées à même les impôts sur les salaires associées à des subsides de l'État. L'article cite comme preuve de l'efficacité de systèmes de formation globale pour les jeunes l'exemple de l'Allemagne de l'Ouest, du Japon et de la France.